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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/629,397 | 07/29/2003 | Michael W. Price | SP02-174 | 7235 |

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CORNING INCORPORATED

SP-TI-3-1

CORNING, NY 14831

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| EXAMINER |
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HITESHEW, FELISA CARLA

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| ART UNIT | PAPER NUMBER |
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1722

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,397

Applicant(s)

PRICE ET AL.

Examiner

Ngoc-Yen M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 9-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Applicant's election without traverse of Group I in the reply filed on February 15, 2005 is acknowledged.

Claims 9-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 15, 2005.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuma et al (6,377,332) in view of Hammond et al (6,093,245).

Sakuma '332 discloses an optical member for photolithography comprising a calcium fluoride crystal exhibiting an internal transmittance of 99.5%/cm or greater with respect to light emitted from an F₂ laser (i.e. 157 nm) (note claim 1).

The difference is Sakuma '332 does not disclose the chlorine concentration in the fluoride crystal.

Hammond '245 discloses that highly pure crystal of alkali metal halide material is useful as optical elements (note column 1, lines 29-40). Hammond '245 further discloses that graphite has been used as a crucible material for growing calcium fluoride and barium fluoride. It has the desirable properties of being very resistant to corrosion by these inorganic crystal materials, being able to withstand the high temperature needed to melt the crystal material, and resulting in little contamination. Unfortunately however, graphite is porous. When it is used as a crucible material for alkali metal halide crystal growth, the melt leaks into and through the crucible, thus making such a crucible unsuitable for alkali metal halide crystal growth. In addition, surface of the graphite upon cooling, thereby preventing their ready removal from the crucible without damage to either the boule or the crucible (note column 2, lines 34-52).

Sakuma '332 discloses a crucible comprising a vessel of porous carbon having a wall with a thickness, an outer surface, and an inner surface; a surface depth region of at least the inner surface being impregnated with addition carbon to close open porosity at the surface (note claim 1). The porous carbon can be graphite (note claim 2) and the addition carbon can be graphitic pyrolytic carbon (note claim 3) or glassy carbon (note claim 4). The crucible can be used for growing calcium fluoride (note column 6, lines 28-32).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to maximize the purity of the calcium fluoride disclosed in Sakuma '332, as suggested by Hammond '245. Also, it would have obvious to one skilled in the art to use the crucible of Hammond '245 in the process of producing the calcium fluoride

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of Sakuma '332 because such crucible would permit release of the cooled crystal without remelting (note abstract), since graphite was not in contact with the crystal, any chloride impurity in the graphite would not migrate to the crystal itself.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stan Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.



Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
March 21, 2005